

**CLAIMS**

What is claimed is:

1. A multi-speed transmission assembly for a vehicle comprising:  
a plurality of selectable speeds within a main gear box, said main gearbox having a highest numerical gear ratio; and  
at least three selectable speeds within an auxiliary gearbox, each of said speeds within said auxiliary gearbox engagable in conjunction with the highest numerical gear ratio within said main gearbox.
2. The assembly of claim 1, wherein the three selectable speeds within the auxiliary gearbox are engagable in conjunction with the highest numerical gear ratio during forward movement of the vehicle.
3. The assembly of claim 1, wherein the combination of selectable gears providing the highest gear ratio within the main gear box cooperates with selectable gears within the auxiliary gear box to provide a highest numerical gear ratio, a second highest numerical gear ratio, and a seventh highest numerical gear ratio.
4. The assembly of claim 1, wherein a difference between each gear ratios step is less than 40 percent.

5. The assembly of claim 1, wherein the ratio between the highest overall forward gear ratio and the lowest overall gear ratio is greater than or equal to 19 to 1.

6. The assembly of claim 1, wherein the percent difference between the highest numerical gear ratio and the second highest numerical gear ratio is less than 30%.

7. The assembly of claim 1, wherein said main gearbox includes five gears supported for rotation about a main shaft.

8. The assembly of claim 1, wherein the main gear box includes an input shaft and a main shaft, the main shaft supporting a plurality of gears, the plurality of gears selectively coupled to the main shaft for selecting a gear ratio.

9. The assembly of claim 1, including at least one countershaft driven by an input gear fixed to the input shaft.

10. The assembly of claim 1, wherein the auxiliary gearbox includes at least 2 gears supported about an output shaft that are selectively coupled to the output shaft by corresponding clutch collars.

11. A low range splitter transmission assembly comprising;

a plurality of main gears supported about a main shaft, said main gears selectively coupled to said main shaft to provide a plurality of different main gear ratios, said plurality main gear ratios having a highest numerical gear ratio; and

at least two auxiliary gears supported about an output shaft, said at least two auxiliary gears selectively coupled to said main shaft to provide different gear ratios, wherein all of said gear ratios are combinable with said highest numerical gear ratio to provide an overall ratio.

12. The assembly of claim 11, wherein said highest numerical gear ratio corresponds with an overall highest numerical gear ratio, a second highest numerical gear ratio, and a seventh highest numerical gear ratio.

13. The assembly of claim 11, wherein a percent difference between the overall highest gear ratio and the second highest gear ratio provides for shifting during rotation of said output shaft.

14. The assembly of claim 13, wherein said percent difference between the highest numerical gear ratio and the second highest numerical gear ratio is less than 30%.

15. The assembly of claim 12, wherein the overall difference between said highest gear ratio and a lowest gear ratio is between 19:1 and 25:1.